

Serial Number 10/696,976

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Previously amended) A gripper and catheter system for treating a patient comprising:

a catheter shaft having a proximal end and a distal end; the shaft defining a longitudinal axis;

a hub affixed to the catheter shaft near its proximal end; the hub providing a handle for manipulating the catheter shaft, the hub having a larger size than an outer radial dimension of the catheter shaft;

a tubular gripper surrounding a portion of the catheter shaft, the gripper defining inner and outer surfaces; the gripper outer surface having a plurality of outwardly protruding ridges extending transversely in a ring around the outer surface of the gripper; the gripper inner surface and an outer surface of the hub having a matching indentation and protrusion for a releasable interference fit which tends to releasably hold the gripper in an initial position;

wherein the gripper is movable from the initial position to a desired position, at least a portion of the gripper being flexible so that it can be temporarily squeezed to cause at least a portion of the gripper inner surface to contact a portion of an outer surface of the catheter shaft to that the gripper can transmit frictional forces to the catheter shaft;

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when the squeezing pressure is released, the gripper tends to resiliently return to its original shape; such that the gripper may be moved to a second desired position on the catheter shaft.

Claim 2 (Original) The gripper and catheter system of Claim 1, wherein the gripper is made of a polymer material.

Claim 3 (Withdrawn) The gripper and catheter system of Claim 1, wherein the catheter further comprises a balloon affixed to the catheter shaft near its distal end.

Claim 4 (Cancelled)

Claim 5 (Cancelled)

Claim 6 (Withdrawn) The gripper and catheter system of Claim 1, wherein the catheter further comprises a balloon affixed to the catheter shaft, and the catheter shaft defines an inflation lumen connecting an inflation port defined by the hub to an interior of the balloon, and the catheter shaft defines a guidewire lumen connecting a distal guidewire port distal of the balloon and a proximal guidewire port positioned between the balloon and the hub, in a rapid-exchange configuration.

Claim 7 (Original) The gripper and catheter system of Claim 1, wherein the catheter shaft has a lubricious coating.

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Claim 8 (Original) The gripper and catheter system of Claim 1, wherein the gripper is releasably locked in an initial position by a snap-fit with the hub.

Claim 9 (Withdrawn) The gripper and catheter system of Claim 1, wherein the hub and gripper have complementary screw threads, such that the gripper can be releasably held in an initial position.

Claim 10 (Original) The gripper and catheter system of Claim 1, further comprising a strain relief tube affixed to the hub and catheter shaft, the gripper in an initial position surrounding at least a portion of the strain relief tube.

Claim 11 (Currently amended) A gripper and catheter system for treating a patient comprising:

a catheter shaft having a proximal end and a distal end; the shaft defining a longitudinal axis;

a hub affixed to the catheter shaft near its proximal end; the hub providing a handle for manipulating the catheter shaft, the hub having a larger size than an outer radial dimension of the catheter shaft;

a tubular gripper surrounding a portion of the catheter shaft, the gripper defining inner and outer surfaces; the gripper outer surface having a plurality of outwardly protruding ridges extending transversely in a ring around the outer surface of the gripper;

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wherein the gripper is movable from an initial position to a desired position, at least a portion of the gripper being flexible so that it can be temporarily squeezed to cause at least a portion of the gripper inner surface to contact a portion of an outer surface of the catheter shaft to that the gripper can transmit frictional forces to the catheter shaft;

when the squeezing pressure is released, the gripper tends to resiliently return to its original shape; such that the gripper may be moved to a second desired position on the catheter shaft,

further comprising a strain relief tube affixed to the hub and catheter shaft, the gripper in an initial position surrounding at least a portion of the strain relief tube, wherein the strain relief tube comprises a protruding ring, and the gripper has a corresponding inner indented ring.

Claim 12 (Original) The gripper and catheter system of Claim 1, wherein the gripper is made of a material with a high coefficient of friction.

Claim 13 (Original) The gripper and catheter system of Claim 1, wherein an initial gap is defined between an outer dimension of the catheter shaft and an inner dimension of the gripper.

Claim 14 (Original) The gripper and catheter system of Claim 1, wherein an outer dimension of the catheter shaft is approximately 2 millimeters or less.

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Claim 15 (Original) The gripper and catheter system of Claim 1, wherein the gripper is made of a material selected from the group: rubber, polyurethane silicone rubber, and PEBA.

Claim 16 (Cancelled)

Claim 17 (Original) A gripper and catheter system for treating a patient comprising: a catheter shaft having a proximal end and a distal end; the shaft defining a longitudinal axis;

a hub affixed to the catheter shaft near its proximal end; the hub providing a handle for manipulating the catheter shaft, the hub having a larger size than an outer radial dimension of the catheter shaft;

a tubular gripper surrounding a portion of the catheter shaft, the gripper defining inner and outer surfaces;

wherein the gripper is movable from an initial position to a desired position, at least a portion of the gripper being flexible so that it can be temporarily squeezed to cause at least a portion of the gripper inner surface to contact a portion of an outer surface of the catheter shaft so that the gripper can transmit frictional forces to the catheter shaft;

when the squeezing pressure is released, the gripper tends to resiliently return to its original shape; such that the gripper may be moved to a second desired position on the catheter shaft;

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wherein the gripper is initially affixed to the hub and the physician must initially break an attachment to move the gripper to the first desired gripping position.

Claim 18 (Withdrawn) A gripper and catheter system for treating a patient comprising: a catheter shaft having a proximal end and a distal end; the shaft defining a longitudinal axis;

a hub affixed to the catheter shaft near its proximal end; the hub providing a handle for manipulating the catheter shaft, the hub having a larger size than an outer radial dimension of the catheter shaft;

a tubular gripper surrounding a portion of the catheter shaft, the gripper defining inner and outer surfaces;

wherein the gripper is movable from an initial position to a desired position, at least a portion of the gripper being flexible so that it can be temporarily squeezed to cause at least a portion of the gripper inner surface to contact a portion of an outer surface of the catheter shaft to that the gripper can transmit frictional forces to the catheter shaft;

when the squeezing pressure is released, the gripper tends to resiliently return to its original shape; such that the gripper may be moved to a second desired position on the catheter shaft;

wherein the gripper is made of more than one layer of different materials.

Claim 19 (Withdrawn) A gripper and catheter system for treating a patient comprising:

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a catheter shaft having a proximal end and a distal end; the shaft defining a longitudinal axis;

a hub affixed to the catheter shaft near its proximal end; the hub providing a handle for manipulating the catheter shaft, the hub having a larger size than an outer radial dimension of the catheter shaft;

a tubular gripper surrounding a portion of the catheter shaft, the gripper defining inner and outer surfaces; the gripper having one or more slits formed in the gripper, so that it can be positioned around or removed from the catheter shaft;

wherein the gripper is movable from an initial position to a desired position, at least a portion of the gripper being flexible so that it can be temporarily squeezed to cause at least a portion of the gripper inner surface to contact a portion of an outer surface of the catheter shaft to that the gripper can transmit frictional forces to the catheter shaft;

when the squeezing pressure is released, the gripper tends to resiliently return to its original shape; such that the gripper may be moved to a second desired position on the catheter shaft.